

		National Institute of Technology Meghalaya An Institute of National Importance											CURRICULUM				
Programme		Bachelor of Technology in Electronics and Communication Engineering						Year of Regulation						2018-19			
Department		Electronics and Communication Engineering						Semester						VI			
Course Code	Course Name	Credit Structure				Marks Distribution											
		L	T	P	C	INT	MID	END	Total								
EC 374	Designing IoT Platform with Arduino & Pi	2	0	0	2	50	50	100	100								
Course Objectives	To understand basic of IoT, Arduino and Pi	Course Outcomes	CO1	Design of circuits using Arduino													
	To develop the Arduino based applications		CO2	Able to analyse the bugs in the Arduino													
	To develop an interface between Arduino and Pi		CO3	Able to interface Arduino & Pi													
			CO4	Design of IoT platform through Arduino & Pi													
No.	COs	Mapping with Program Outcomes (POs)												Mapping with PSOs			
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
1	CO1	2	-	-	-	-	-	-	-	-	-	-	-	3	-	3	
2	CO2	-	3	-	-	-	-	-	-	-	-	-	-	2	-	2	
3	CO3	2	-	3	-	-	-	-	-	-	-	-	-	2	3	2	
4	CO4	-	2	3	-	-	-	-	-	-	-	-	1	2	3	2	
SYLLABUS																	
No.	Content													Hours	COs		
I	Introduction – Digital and analog signals, Sensors (temperature, accelerometer, IR, Obstacle, ultrasonic), communication modules, LCD display, data processing units													6	CO1		
II	Arduino- Interfacing analog and digital sensors, interfacing Wifi, BLE and Zigbee modules, Data collection.													6	CO1, CO2		
III	Raspberry Pi- communication facilities on raspberry pi (I2C, SPI, UART), working with GPIO library, Interfacing of sensors and actuators, Teraterm communication													6	CO3		
IV	Interfacing Pi and Arduino													2	CO3, CO4		
V	Case Study – IoT platform design for soil moisture sensors.													4	CO3, CO4		
Total Hours													24				
Essential Readings																	
1. M. margolis, “Arduino cookbook ,“ O’Reilly Media, Inc.,2nd edition, 2011																	
2. E. Upton and G. Halfacreee, “ Raspberry pi user guide,“ John Wiley & Sons, 2nd edition, 2012																	
Supplementary Readings																	
1. G. Mitnick, "Raspberry Pi 3: Learn to Use Raspberry pi 3! An Introduction to Using with Python, Scratch, JavaScript and More", CreateSpace Independent Publishing Platform, 1 st edition, 2017.																	